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AUTHOR Frank, Kenneth A.; Lee, Valerie
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ABSTRACT

Surprisingly little research has been conducted on noncollege-bound high school graduates who do not fall into some other category such as disadvantaged or unemployed. A study used data drawn from the High School and Beyond research (a multipurpose national longitudinal study of America's high school students) to examine 4,537 high school graduates (class of 1980) who did not attend a two- or four-year college within two years of their high school graduation. Fifty-eight percent of the class of 1980 attended college, leaving 42 percent that did not. Not surprisingly, students from the highest social levels and with the highest levels of academic achievement were most likely to attend college. On the other hand, many of those who did not choose to attend college could have chosen to do so (this appeared especially true for qualified blacks, who often chose full-time employment over college). Of those 1980 graduates who did not attend college, 3,667 found full-time employment and 870 engaged in "other" activities. Four years after graduation, a full 30 percent of the 870 persons in the "other" category had found full-time employment. The remaining graduates were involved in the following activities: vocational education (9.6 percent), apprenticeship (2.0 percent), government training (0.5 percent), living alone (5.4 percent), Manpower (2.9 percent), a Comprehensive Education and Training Act program (12.1 percent), the Youth Corps (2.8 percent), employer training (11.6 percent), church activities (19.8 percent), noncredit college courses (8.2 percent), and social clubs (17.1 percent). (MN)

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Who Are the High School Graduates Who Don't Go to College?

Kenneth A. Frank
Valerie Lee

University of Michigan

October 1987

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Running Head: GROUPS OF HIGH SCHOOL GRADUATES

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BACKGROUND

Researchers in psychology, education, and sociology have grouped their populations into discrete sub-populations which form the bases for further analyses. A by-product of this grouping process is a category called the "other" group. "Other" groups usually consist of a hodge-podge of subjects who do not fit into a particular analytic scheme. They fall by the wayside as a group that doesn't count, one which will not be studied either as a treatment or a control group. When dealing with human subjects, "others" frequently consist of people who are disadvantaged, or who do not fit the experimental scheme because of unique characteristics. In a sense, one cannot adequately describe a sub-population without making comparisons to all other groups within that population. Our analyses focus on four groups, describing each with respect to the other three. Included in our analysis is the group of "others," and we explore the characteristics which define the poeple in this group and which provide a contrast to the rest of the high school graduates.

High school graduates frequently have been grouped based on the activities which they pursued immediately after high school. Many studies have found that race, socioeconomic and related background characteristics, and high school behaviors affect the extent of a student's post-secondary education (Anderson, 1981; Astin 1977; Astin 1982; Dawkins 1982; Donovan, 1984; Hatch, 1984; Henson and Astin, 1978; Karabel, 1972; Karabel, 1974; Lee, 1985; Lomax, 1984; Pascarella, 1985; Perry, 1981; Rosenbaum, 1976; Rugg, 1982; Thomas, 1980; Tinto, 1975; Tracey and Sedlacek, 1984). Fewer studies have taken a second group, those who seek employment, and have found that youth have higher unemployment rates than other groups of workers (Hotchkiss, 86; Cohany, 86; Haughey, 83; Hargroves 84; Black, 80; Bureau of Labor Statistics Report, 80). Specifically, The Bureau of Labor Statistics reported that in 1978, 10.8% of the white men between ages eighteen and nineteen were unemployed, compared to white men of age twenty, who had an unemployment rate of 7.8%. Percentages for blacks and women show equal or greater differences between the two age groups. The authors comment also that workers older than twenty experience unemployment rates lower than those tuenty or younger.

In studies of post-secondary education and employment of youth, the groups of people not fitting the researchers' categories are frequently left out of the analysis. Those studies concerned with post-secondary schooling rarely consider

the backgrounds and aspirations of those who did not go to school. Likewise, studies of labor rarely compare the characteristics of those who don't work with those who do. Frequently, we are given only percentages of demographic data when studying these "other" groups, but we are not given a full description based on background and high school qualities.

A few studies have examined both employment and education. For example, Harrel and Wirtz (1979) recognized the necessity of presenting descriptions of all groups of high school students. They used data from the National Longitudinal Study to compare the backgrounds of 1972 high school graduates who pursued different activities out of high school. They defined five groups: 1)those who attended a four-year college full-time (27% in 1972); 2)those who attended a two-year college full-time (12% in 1972); 3)those who worked full-time (32% in 1972); 4)those who enrolled in a vocational education program (23% in 1972); and 5)those pursued none of the above activites -- Others (6% in 1972). They grouped members of the high school class of 1972 in each of the five Octobers from 1972 to 1976 and tracked the movement from group to group across each time period. Black and low socioeconomoic status youth were more likely to be unemployed soon after high school, which agrees with the findings of most other studies which have investigated these questions. Working in high school, doing homework, and engaging in extra-curricular activities were also found to exert a positive effect on the likelihood of finding employment after graduation.

The population of unemployed youth was also examined separately by sex and race with the factors influencing unemployment different for the males, females, blacks and whites. For example, black females experienced a 20% unemployment rate, compared to 9% for black males (from 1972 to 1976). Black females also were shown to be influenced more by their father's expectations than were black males. Among men, few differences were found along racial lines. Also among men only, the number of hours spent on homework was found to affect the chances for employment. When all variables were considered in a causal model predicting employment, gender alone accounted for 12% of the variance in employment.

Relatively little research has focused on comparing the people who go to college with those who work, with those who are "others." In this study, we describe all four groups by their background characteristics and behaviors, with particular emphasis on the "others," who have avoided the micrsoscopes of past researchers. We seek to add more definition to the "others" than did Harrel and Wirtz, who stated "...the variety of activities included in this category tells

us only that these youth were not employed and not in school full time" (1979, Chapter 2, p13).

METHOD

Sample and Data. Data were drawn from High School and Beyond (HS&B), a multi-purpose nationally representative longitudinal study of America's high school students. The sample used in this study came from the original HS&B sample of 1980 high school seniors, which included almost 30,000 randomly selected students in over 1,000 randomly selected high schools. Information was gathered on a large subsample of these students at two additional timepoints, at two (1982) and four (1984) years after high school graduation. The total sample for these two follow-ups (N=10815) was used for the first part of the study. In the base year (1980), certain high schools (private schools and schools with high enrollments of minority students) were oversampled. The subsequent followup sample contained all the private school students and minority students from the original study, but reduced the remaining sample (largely white and from public high schools) to 38% of its original size. Because of this purposive oversampling at both base year and (particularly) the followups, all analyses employed the design weights supplied with the HS&B data. Therefore, results may be generalized to America's high school class of 1980. Although their proportions in the population are relatively small, parameter estimates for the minority groups are stable because of the relatively larger samples for those groups due to sampling procedures.

The analyses which investigated those who did not go to college include all those students who did not attend a 2- or 4-year college within two years of high school, resulting in a sample of 4537 (42% of all high school graduates). This group was further subdivided into two groups. Members of the first group held a full-time job at some point within the first two years out of high school (N=3667, 33.9% of high school graduates). Members of the second group (N=871, 8.1% of the total sample) neither attended college nor worked full-time within two years of high school graduation. Therefore, we have defined four mutually exclusive groups out of high school graduates, in contrast to the five groups that were defined by Harrel and Wirtz. The groups are:

This study	Harrel and Wirtz

1)Attended a 4-year college	1)Attended a 4-year college full time
2)Attended a 2-year college	2)Attended a 2-year college full time
3)Worked full-time	3)Worked full-time
4)Other	4)Took Vocational Education
	5)Other

Unlike Harrel and Wirtz, we constructed our categories to represent the activity of the high school graduate throughout the first two years after high school. The reasoning for this structure begins with the fact that more high school graduates attended college part-time in 1980 than in 1972 (National Center for Educational Statistics, 1982). We wished to consider these people part of the college-going population. Therefore, our college categories include all high school graduates who took at least one college course within two years after high school. In focusing on the high school graduates who did not follow this trend toward higher education, we constructed mutually exclusive categories over a two year period. The result is that a subject whom we defined as working full-time was one who did not attend a 2- or 4-year college. Since the "other" group consisted of those not in any other category, the group we defined as "others" should be very similar to the group defined by Harrel and Wirtz as being in the "other" category across all time points. Theoretically, our proportion of "others" would be partially inflated because it is based on two instead of five years, but partially deflated because those who were in school part-time were placed in the attending school categories instead of the "other" category. Finally, we did not define a separate group of people who took vocational education because much of the training is now localized in two-year colleges. Therefore, only a very small percentage of those who did not attend college would have fallen into the vocational education group in 1982, thus not justifying a unique category. We have investigated vocational education as an activity within each group.

The analyses in this paper are primarily descriptive. Contingeny tables and group means for many categorical and continuous variables across the four groups are reported in Table 1. Significance levels are not reported because of the extensive number of non-independent tests which are run throughout the analysis.

Two discriminant analyses were performed to isolate the variables which most clearly defined the four groups. The first analysis was based on the background variables of the students, which included achievement, socioeconomic status,

gender, and racial/ethnic minority. The second was based on high school achievements and behaviors which included college expectations, number of math courses taken in high school, high school grade point average, number of hours of homework per week, curricular track, application to college, and achievement. Achievement was included in the first analysis because it was the best measure of ability available for the high school seniors. Achievement was included in the second analysis as one of the outcomes of high school.

Regression was used to simultaneously consider several variables in their ability to predict attendance at college, a dichotomous variable differentiating those who went to college (2 and 4-year) from those who did not. A path-analytic causal model was then developed to estimate the direct and indirect effects of background and high school- level variables on the probability of college attendance. The structural model which guides this analysis is shown in Figure 1. This model is composed of three constructs and the dependent variable. The three latent constructs, background characteristics, high school behaviors and high school outcomes, are operationalized by a set of measured variables. Pairwise deletion of missing data was used to maximize use of information on relationships among the variables.

We began the analysis by evaluating path A, the effect of the background characteristics (social class; race; and gender) on high school behaviors (number of math courses taken; college aspirations; amount of homework done; the degree to which parents showed interest in their academically related activities; the student's curricular track, and whether the student attended a Catholic high school). The effects of background and high school behaviors on high school outcomes (grade point average; academic achievement; and whether the student applied to college within high school) were then estimated -- paths B and C. Finally, the effects of all three constructs on the dichotomous variable representing college attendence were estimated -- Paths D, E, and F. The results of all path analysis regressions are presented as standardized regression coefficients in order to make comparisons of the magnitude of effects, both direct and indirect, across the many variables in this model which are scaled on different metrics. Direct effects of all model variables on the final dependent measures and intermediate effects that typify path coefficients for the entire analytic model are presented.

It has been found that ordinary least squares methods produce unbiased estimates of structural relationships if the distribution of the dichotomous

dependent measure is non-extreme (between 20% and 80%), since the middle portions of the curve produced by an untransformed analysis with a dichotomous dependent measure is essentially linear (Goodman, 1978; Markus, 1979). The distribution of those who went to college versus those who did no falls in the "safe" zone (42% and 58%); logistic regression methods were not required for this analysis.

Separate descriptive analyses were conducted using new variables to try to capture the depth of the activities in which the "others" were engaged. We resisted causal modeling in working with this group because of the lack of a clear comparison group, with subjects in this group evidencing characteristics of each of the other three groups. The descriptive and discriminant analyses address the relationships of the background characteristsics of the "other" group with those of the three more clearly defined groups.

Results

What are the Choices for the High School Graduate?

The high school seniors of 1980 crossed a significant line into adulthood upon graduation. They worked, went to college, combined work and college, or did something else. Each path has its own implications for the future. In Table 1, we see the number of people exploring the mutually exclusive categories of 1)attended a 4-year college (34.9%); 2)attended a 2-year college (23.1%); 3)worked full-time (33.9%); and 4)pursued some other activity (8.1%). While 58% of the high school graduates attended college, 42% did not. Although this analysis focuses primarily on the 42% of the high school population which was not exposed to the college experience within the first two years out of high school, some information about all four groups is revealing.

It is no surprise that social class is highest for those who went to 4-year colleges, second for those who attended 2-year colleges, third for those who worked full-time, and fourth for those who pursued "other" activities. The higher social class of those who attended college could be explained in several ways. One is that students of higher social class perform better in school and on standardized tests, and therefore have more intent to apply to, and are most likely to be accepted by, colleges. Another is that those of a higher social class might be able to afford college tuitions, and, more importantly, families

of higher social class might be able to support their children for the four years of college immediately after high school.

The pattern representing the percentage of blacks in each group is opposite to that of social class, with a trend going from lowest for college to highest for "others." However, the proportion of blacks in 4-year colleges (11%) is slightly higher than for those in 2-year colleges. The standard measure of achievement follows the same pattern as social class. The relationship these variables have to the ultimate path of attending college will be explored in the causal model.

The percentage of females in each group, however, does not follow the same pattern as achievement or race. That is, the percentage of females declines from 4-year college to 2-year college to working full-time, but females actually are highest proportionally among the "other" group. The formation of a family presents another adult option and responsiblity which awaits the high school graduate, which could explain a higher percentage of females in the "other" group. We explore this possibility.

Academic variables:

Placement in the academic track, evidences a pattern similar to that of social class and achievement for college goers. However, while 64% of those who went to 4-year college came from the academic track, 38.6% of 2-year college students, and 15.6% of those who worked full time, somewhat more people (24.2%) in the "others" group were placed in the academic track in high school. Other academic variables show a similar trend, with those not going to college being more disadvantaged than those who did, but among those who did not go to college, the "others" showed more ability and interest in school than those who worked full-time.

The background variables form two different patterns: 1) the pattern for achievement, which decreases from 4-year college to 2-year college to working full time to "other," and 2)the pattern for academic variables (e.g., academic track, grade point averages, homework) which decrease from 4-year college to 2-year college to "other" to working full-time.

About 35% of the "others" were accepted to college but chose not to go, indicating that acceptance to college was not the only primary barrier to college attendance for the "other" group. The acceptance rate of the others is supported by their relatively strong showing on the academic variables compared

to students entering the employment market full-time. The only academic variable on which the "others" do not perform as well as those who worked full-time is that of math coursetaking in high school. Perhaps the high proportion (62%) of the females in the "other" group accounts for this.

Almost twice the proportion of "others" had children when compared to those who worked full-time. Again, this might be related to the high proportion of females in this group. Full-time workers, in turn, were twice as likely to have children than were either of the college-going groups. Domestic characteristics, in general, followed the same pattern, with the "others" being most involved in raising a family and the college-goers being least involved. Yet, while the differences in the proportions are large, the relative proportion of the "others" (14%-19%) suggests that these variables are not a major factor in explaining the circumstances of the majority of the "other" group.

The patterns for the importance of work in 1982 is ambiguous, but the pattern in 1984 is clear: work is more important to those who went to college than those who didn't. The "others" seemed to place particularly little emphasis on the importance of work. One possible inference would be that the "others," who are more likely to be females with developing families, are the ones who are placing little emphasis on work. This could be enough to swing the mean for the entire group.

The last group of variables refers to the progress of the groups four years after high school graduation. The salaries of those who attended college are almost equal to the salaries of those who did not. Note that these salary figures are based on the highest monthly salary earned before February of 1984. That means that those who went to college full-time would still have been in their senior year, with salaries based on summer jobs or in-school employment. The proportions of those married and with children four years out of high school are revealing, since these proportions grew about 10% from 1982 to 1984. For the "others", this constitutes a 50% increase in the proportion of people getting married and having children. Full-time workers were more likely to be married, but less likely to have had children than the "others."

In general, these patterns indicate that those who did not go to college were more likely to be disadvantaged and minority than those who did go to college. They had lower achievement scores in high school. Fewer came from the academic track, they had lower grade point averages, and were less likely to be accepted by colleges. They were more likely to be married and have children two-years out of high school. Perhaps consequently, family concerns were more

important to non-college goers. The total picture suggests that socioeconomic status has an important influence in determining a high school graduate's options and ultimate path immediately out of high school, particularly in terms of limiting future options.

Comparing the two groups of high school graduates who did not go to college, we see that those who worked appear more advantaged than the "others" on the background measures, but that the "others" appear to have been moderately more academically inclined. The relatively large difference in the proportions of females in the non-working group might explain the academic and family behaviors of the "others." While differences for track and minority percentages are not as great as those for the gender proportions, they may well yield differences among the subpopulations upon further analysis. In the remainder of our analyses we focus our efforts on trying to untangle these relationships, particularly on gender, race/ethnicity, and academic track as possible explanatory factors for the group mean differences from Table 1.

Gender As It Influences the Characteristics of the Groups

Table 2 shows the most interesting of the variables presented in Table 1 broken down by gender. The percentages of blacks do not differ by sex within the groups, except that more black females (11.5%) than black males (9.7%) attend 4-year colleges. The percentage of blacks in the full-time working category are quite similar for males and females (11.0% and 11.3%). The percentages in the "other" category are not as close, but still not strikingly different (16.0% and 17.5%).

The socioeconomic status of the females is consistently lower within each group than that of the males. This finding is crucial in explaining several other differences among the groups, because socioeconmic status is correlated with achievement, attitude and other academic variables. We have no internal statistical controls for this (or any other) factor, as this analysis is primarily descriptive.

Females show lower achievement within each group, with these differences largest for the two college groups, but they are consistent across all groups. It is well documented that females score somewhat lower on standardized tests than males (especially in math), so these findings are not surprising since the composite score includes mathematics. It is surprising that males who are

"others" score lower than the males who were working full-time, since we had considered that the achievement difference seen in Table 1 was attributable to the higher proportion of women in the "other" group. We note that these differences might also be related to the difference in social class, since social class and achievement are highly related.

In each group, the females had higher grade point averages than the males, but were less likely to come from the academic track. Acceptance rates to college reflect these trends for both sexes, although lower percentages of females than males were rejected from college. A possible explanation for why the "others" had higher grade point average than the full-time workers is that the "others" were more likely to be female, and females did better in school. On the other hand, we see that the female "others" actually reported lower grade point averages than the female workers, and that it is the male "others" who had higher grade point averages than the male workers. A similar pattern holds true for academic track. Here, both males and females in the "other" category were more likely to come from the academic track than the workers, but the difference between the males (28.2% in the "others" versus 15.5% for the workers) is greater than the difference between the females (21.6% for the "others" versus 15.8% for the workers).

Among family concerns, a gender-related pattern emerges. A higher percentage of the females had children and were homemakers, and females placed a higher emphasis on the importance of family. For males, "others" were less likely to live with a spouse and to have had children than were the workers, a pattern sustained in 1984. With respect to family, we conclude that the females in the "other" category appear to account for the original emphasis on family among "others." Finally, it is impossible to overlook the difference in salary ranges between men and women within each group. Females had lower salaries than males in all groups.

Minority Group Differences Across Activities After High School

Our four groups are broken down by minority categories in Table 3, with separate figures for blacks, hispanics, and whites. Minorities show a lower socioeconomic status, lower test scores, and were less likely to be in the academic track within each group. This finding, while distressing, is unsurprising. The academic differences also are reflected in the grades and in college acceptance rates. Curiously, the acceptance rates of whites is lower

than that of the blacks for those who worked full-time. Perhaps many blacks who worked full-time may have had an opportunity to go to college, but could not afford it within the first two years of high school. On family issues, the blacks and hispanics demonstrate similar family tendencies to those of whites. Approximately the same percentages (4% for blacks, 6% for hispanics, and 4% for whites) are married and attending four-year colleges. The difference for those attending two-year colleges is small, but higher for the whites. In the "other" category, 22% of the whites are married versus 7% of the blacks. This is contrasted with the percentages of the groups who have had children. In each group, the blacks are more likely to have had children than the whites. Putting the two together, we conclude that a higher percentage of non-college going whites were married within two years out of high school, but a higher percentage of blacks had children within two-years of high school. It could be that more of the black marriages produce children, or it could be that there are more children from single parent homes within the black population. We see that four years after high school, the blacks are much less likely to be married in each of the four groups.

Hispanics fell between the whites and the blacks on achievement and social class. The percentages of females are comparable between hispanics and the other races for all but those who attended a 4-year college. On the academic variables, the hispanics were less likely to come from the academic track in most for all groups but the full-time workers. They took approximately the same number of math courses as blacks, although hispanics were accepted to college in the smallest proportions. The hispanic "others" were least likely to have had children, while hispanic workers were between the whites and the blacks in the proportion of people who had had children. The hispanics consistently considered family matters of greater importance than did the whites and blacks. For hispanics, the importance of family does not necessarily translate to higher marriage and birth rates.

The salary variable again reveals apparent inequities, with salaries of blacks lower within each category than the salaries of whites and hispanics. Differences again might be attributed to differences in socioeconomoic status, or the extent of one's pursuit of a job. If the first explanation is true, then the myth of equal opportunity is questioned. The second possibility is refuted by the fact that within the first three groups, blacks report being unemployed and looking for work in greater percentages than whites.

Group Differences by Track Placement in High School

One of the most important structural influences on high school students is curriculum tracking. Table 4 presents the four groups broken down by academic track, with academic (A), general (G), and vocational (V) track members presented separately. Socioeconomic status and academic achievemnt are highest for the academic track members within each group. Blacks and females are more likely to be found in lower academic tracks within most of the categories, with a higher percentage of blacks in the full-time work category from the academic track than in the other categories. This supports arguments made above that some of the qualified blacks work full-time instead of going to college.

Unsurprisingly, the percentages of academic track members accepted to college are greater than those for the general and vocational tracks across all groups. This trend is also reflected in the family characteristics, where those in the general and vocational tracks show more family interests and behaviors. Those coming from the academic track are less likely to get married and less likely to have children across all groups. Academic track members who do not go to college show similar proportions of being unemployed and looking for work (23.2% versus 23.9%) to those from the general track, while in the "other" category, those from the general track have the lowest unemployment, followed by the academic and then the vocational tracks. This evidence suggests that the academic track is as good (and probably better) preparation for the job market as the vocational track. The salary figures reflect the same pattern, except for the "other" category, where those from the vocational track report having jobs paying approximately $200.00 more per month four years out of high school than those of either the general or academic tracks. This suggests that those from the vocational track might have had more trouble finding a job initially, but that the jobs that they did find pay relatively well. In fact, their salaries were comparable to the salaries of all groups, although we might expect that those graduating from college would soon surpass the earning power of those not graduating from college.

Casual Models

In previous discussions, we have mentioned the interrelationships of background and other characteristics. Here we use discriminant analysis to help determine a causal pattern which best differentiates our four groups based on

relationships among more than one or two variables. Two discriminant analyses were performed, one using background characteristics to differentiate among the groups, and another using high school behaviors and outcomes. The results of the discriminant analysis are in Table 5.

The first group of variables forms one factor, which accounts for 33% of the variance explained by the analysis. Factor loadings were in the following order of magnitude: 1)base year academic achievement; 2)socioeconomic status; 3)minority; and 4)female. The function is based primarily on socioeconomic status and academic achievement. The function itself loads positively on the four-year college goers, near zero on those attending two-year colleges, negatively on the full-time workers, and highly negative on the "others." This confirms the heavy influence of socioeconomic status and other background variables suggested in the discussion of Table 1.

Considering the second discriminant function in Table 6, one primary function is formed from the group of high school behaviors and outcomes. It is responsible for a much higher proportion (89%) of the variance explained by the discriminant analysis. The discriminant function shows associations as follows (in order of factor loadings): 1)applied to college during high school; 2)college expectations in high school; 3)emphasis of math courses in high school; 4)academic achievement in high school; 5)academic track; and 6)college expectations in the eighth grade. The function shows the student's ability and desire to go to college, especially a 4-year college. Not surprisingly, the function loads positively on those who went to 4-year colleges, and negatively on those who did not go to college (in reverse order from the previous discriminant analysis). It is near zero for those who attended two-year colleges. Showing interest in college early in high school seems to dictate who eventually attends college. Those on the lower end of the socioeconomic spectrum might have the aptitude for college, but might consider college an economic impossibility.

Path Model

The causal model in Figure 1 represents the structural relationships of the variables we have discussed descriptively in previous sections. Regression techniques were used to evaluate these structural relationships of students' background characteristics, high school behaviors, and high school outcomes to a dichotomous variable representing college attendance. All results reported in

this section are presented in the effect size metric of standardized (beta) regression coefficients. Nominal levels of statistical significance were computed, using design weights, without making adjustment for the two-stage probability design of HS&B.

Direct Effects. The last column of Table 7 contains the direct effects of all variables on the probability of college attendance (paths E, D, and F of Figure 1). Forty-two percent of the variance in the dependent measure is explained by the model. It is clear that the background differences on which we have focused throughout our descriptive analysis have relatively small direct effects on college attendance. The one exception to this is social class, which is significant at the .001 level.

High school behaviors, except for the amount of homework done, have significant and positive effects on college attendance. Participating in the academic track, having college aspirations early on, taking a large number of math course, and parental influence all predict college attendance. This is not surprising, and was supported by the descriptive analysis. Many of these high school behaviors may be multicollinear. Being in the academic track could influence the number of math courses the student takes. College aspirations, while measured in the 12th grade, were asked with respect to the student's attitude in 8th grade and were probably not influenced by placement in the academic track, although they may have had some effect on a student's track placement. Multicollinearity among the high school behaviors would serve only to reduce the effect size of each variable with the dependent measure.

High school outcomes also have significant postive effects on college attendance. Achievement and grade point average both have a significant and positive impact on college attendance, but the standardized effects are not as large as that of having applied to college while still in high school. Once we have taken background characteristics, high school behaviors and other high school outcomes into account, high school students who show the intitiative and interest in applying to college in high school are much more likely to attend college.

Indirect Effects. The direct effects indicated that background characteristics were not as directly predictive of college attendance as were high school behaviors and outcomes. However, we saw in our descriptive tables that many

high school behaviors and outcomes showed differences by gender and race/ethnicity. It is therefore likely that the relationships of these variables to college attendance is indirect. Using the framework described in Figure 1, the first eight columns of Table 7 list the indirect effects of variables on college attendance. Specifically, background characteristics are regressed on high school behaviors (columns 1 through 5 of Table 7, path A in Figure 1), background characteristics are regressed on high school outcomes (columns 6 through 8 of Table 7, path B in Figure 1), and high school behaviors are regressed on high school outcomes (bottom section of columns 5-8 in Table 7, path C in Figure 1). Most of the regressions on path A explained approximately 10% of the variance of the dependent variable. The regression on homework explained only 5% of the variance, while background characteristics explained 16% of the varaince of the number of math courses taken in high school.

Indirect Effects on High School Behaviors

Being female positively predicts track placement, parental influence, amount of homework done, and college plans when other background characteristics are taken into account. The confirms the descriptive analysis, where we observed that females were, in general, more academically inclined than males. The coefficient for homework, .180, is particularly high, indicating that females do substantially more homework than males. Also as seen earlier, being female negatively predicts the number of math courses taken. Being hispanic either has no impact or negatively affects the high school behaviors, while being black is a signifiantly positive predictor for all high school behaviors except fo the number of math courses taken. In sum, race/ethnicity and gender have some, but not overwhelming, effects on high school behaviors.

In contrast, socioeconomic class is a positive and significant predictor of all high school outcomes, with all effect sizes greater than .200. It is unfortunate to report that social class still dictates high school behaviors more than any other background variable. This is to say that within social class, females are more likely to take math, but that a female high on social class is more likely to take math than males or females of lower social class. Similar analogies can be drawn for ethnic/racial background.

Indirect Effects on High School Outcomes

Fifty-five percent of the variance of achievement, 32% of grade point, and 36% of applying to college were explained by the regressions. The background variables had mixed effects on the high school outcomes when an adjustment was made for high school behaviors. Being female negatively predicts achievement, but postively predicts grade point average and application to college. Our descriptive analysis suggested that females emphasized schooling more than males, but that their achievement was lower than males. One possibility considered then was that the lower socioeconmic class of females was responsible for this difference, but the difference persists in this analysis, even though an adjustment has been made for social class. Being hispanic either negatively predicts or has no affect on high school outcomes. Hispanics have lower grade point averages and lower achievement scores. Blacks showed lower grade point averages and lower achievement, but positively predicted college aspirations. Blacks indicate an interest in college, and the hypothesis still remains that economic obstacles exist for blacks who try to pursue the college path. Finally, social class positively predicts achievement and application to college, but is actually a negative predictor of grade point average. We're not certain what conclusions can be drawn regarding the latter result, other than to note that most of the variance for the grade point variable is explained by gender.

All of the high school behaviors have positive and significant effects on high school outcomes. The largest effects are for number of math courses taken, which has effect sizes of greater than .15 for predicting grade point, achievment and application to college. The consistent effect of high school behaviors on high school outcomes is not surprising. One would expect that a student's actions in high school in a large part determine the skills and credentials that the student accumulates in school.

Thus, we see that background characteristics, particularly socioeconomic status, have significant and important indirect effects on college attendance. Gender differences tend to affect high school behaviors, which in turn affect high school outcomes and college attendance. Social class has a strong effect on high school behaviors and outcomes. Although the direct effect of social class on college attendance is .074, the indirect effect is approximately .22. This gives it a combined total effect of .29. High school behaviors highly predict high school outcomes, which in turn highly predict college attendance. Thus, we explain over 42% of the variance of college attendance.

What are the "Others" Doing?

Now that we have described the four groups in general, we will focus on the fourth group, the "others." What are they doing, if they're not working or going to school? One might suspect that they are taking vocational education courses or other non-university courses. Table 8 indicates that only 9.6% of the others are taking vocational education courses. This supports the contention that many recent high school graduates are now taking vocational education courses at 2-year colleges. Only a trivial proportion (2%) of the "other" population are undergoing some type of apprenticeship. We expect that these "others" pursuing job training activities are from the sub-population who reports being out of a job and looking for work. Many of these people were successful in preparing for and finding a job, as fully 30% of the others were working full-time by four years out of high school. Almost 20% of the others claim that they are active in their church. This percentage is among the middle of the four groups, suggesting that the "others" are no more observant than those who go to college and those who work full-time. The "others" were also participating in a variety of part-time activities. More than 25% were in CETA, Youth Corps, and other job training. Unfortunatly, we do not know the extent of participation in many of these programs, and the populations who report being engaged in these programs obviously overlap with the populations involved in other activities.

Discussion

High school graduates of 1984 pursued many different paths upon graduation. Many attended college, more than 40% did not. While some studies have chosen to examine each group separately, we have contrasted those within each group to the rest of their cohort. This allowed us to realise the full effects of background and other differences within each group.

What are the Characteristics of Each Group?

The high percentages of minorites and low socioeconomic status of people in the non-college groups tells us that colleges are still not equally available to all high school graduates. This trend seems to be furthered in the workplace, where those who did not work are from lower socioeconmic backgrounds than those who did. We have difficulty relating the socioeconomic differences with the differences in the proportions of females. It could be that males from lower socioeconomic backgrounds did not graduate from high school and therefore were not included in this study. It is difficult to accept that parents of low socioeconmic status were more likely to have females than are parents of high socioeconmic status, although it remains a possibility.

General trends across the four groups can be described. Those who went to 4-year college came from more advantaged homes, were more likely to be white, had more positive school-related behaviors, and performed better in high school. The qualities of those who went to 2-year colleges were somewhere between those who worked full-time, and those who went to 4-year colleges. 2-year college-goers showed more interest in family and more family behaviors than those who went to 4-year colleges. It could be that these people were blending family and school, and therefore were not able to commit financial or human resources to the college experience. For them, 2-year college was a compromise college, work, and family.

Those who worked full-time came from even more disadvantaged backgrounds than those who went to 2-year colleges. In terms of backgrounds, they were more like the "others" than they were like the college-goers. Yet some of these people demonstrated interest in, and ability for, college. Perhaps they diun't go to college because of economic reasons, both in the sense of the expense of college tuition and the lost income while in college. While it is likely that those who went to college will, on average, earn more those who did not, some people may have found it difficult to commit the resources to college soon after high school graduation. The group of full-time workers who had interest and aspirations for college may be responsible for continued growth in the non-traditional college population in our country.

The full-time workers may also have chosen to avoid college because of their interest in raising a family. Here, causality is difficult to infer. The workers may have chosen not to go to college because of an interest in work and family, or they may developed interest in work and family because they confronted too many obstacles to attending college. Fours years out of high school, this group reports the highest monthly salary, and the highest

proportion were married. We might conclude that these people have been succesful in establishing themselves in society.

The "others" show some characteristics of those who worked full-time, and some of those who went to college. Like the workers, the "others" come from low socioeconomic backgrounds, consist of high percentages of minorities and show interest in, and behaviors towards, family concerns. Like the college goers, many of the "others" did well in school and were accepted to colleges. The high percentage of the "others" who were female suggested that some characteristics were gender related, however subsequent analysis indicated that the males who were "others" were as responsible for the emphasis of family among the "others" as were females. For some of the "others," we accept the explanation that they are raising families and therefore are pursuing neither work nor school. This description, however, does not apply to many of the "others."

What Predicts Who goes to College?

When all factors are taken into account, socioeconomic status has the greatest influence on college attendance. Social class exerts its influence by determining performance in our nation's high schools. Perhaps our systems are geared for those of higher social class, or perhaps the advanatages of higher social class enable some children to come to high school more prepared others. Further, the economic barriers to college are always hovering for those of lower socioeconmic status. They may acknowledge early on that they will not be able to go to college, and thus have less incentive to perform well in high school. Those of lower socioeconomic status who pursue college may find that the barrier of lost income during the years of college attendance may be greater than that of acceptance to, or tuition for, college.

Conclusion

Each of the groups has unique characteristics which could be observed in background qualities and high school behaviors. Those who did not go to college seem to have had background characteristics which might have predicted their path. On the other hand, many of those who did not go to college could have chosen to do so. When we look at the "others" we realize that in many ways they are similar to those who went to college, and we conclude that the individual

had some input into his or her course. Unfortunately, we do not adequately explain the activites of the "others," and this we leave to further study.

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Table 1: Characteristics of 1980 High School Graduates Attending 4-Year College, 2-Year College, Working Full-Time, and Engaged in Other Activities (n=10,815)

	4-Year College	2-Year College	Full-Time (a) Work	Other (b) Activities
Sample Size	3778	2500	3667	870
(% in Group)	(34.9)	(23.1)	(33.9)	(8.1)
(Measured in 1980)				
Background				
Social Class (c)	.27	.03	-.29	-.33
%White	83.8	80.6	77.4	68.4
%Black	10.6	9.1	11.1	16.9
%Hispanic	5.6	10.3	11.5	14.7
%Female	53.0	52.4	45.8	61.6
Achievement (d)	55.1	50.4	46.4	44.9
Academic Track:				
%Academic	64.6	38.6	15.6	24.2
%General	25.4	38.5	45.1	43.8
%Vocational	10.0	23.0	39.3	32.1
GPA	3.23	2.88	2.59	2.62
# Math Courses	3.15	2.29	1.42	1.37
Hrs. of Homework	5.24	3.90	2.84	3.36
College (1980)				
%Expectations,				
8th Grade	.708	.527	.278	.339
10th Grade	.809	.622	.292	.353
%Accepted	66.9	35.0	21.2	34.8
%Rejected	6.9	18.8	30.9	23.8
Academic Influences				
Parental	.192	.004	-.183	-.109
Peer	.444	.237	-.562	-.408
(Measured in 1982)				
%Unemployed & Looking for Work	27.7	24.0	26.3	11.9
Family				
%Had Children	2.7	3.1	10.0	19.4
%Lived W/ Spouse	4.2	5.9	17.9	19.4
%Homemakers	1.2	1.4	3.7	14.4
Importance of: (e)				
Family	-.09	.05	.07	.07
Social Concerns	.03	-.17	-.38	-.26
Work	-.07	.00	-.10	-.28

Table 1 (Continued): Characteristics of 1980 High School Graduates Attending 4-Year College, 2-Year College, Working Full-Time, and Engaged in Other Activities (n=10,815)

	4-Year College	2-Year College	Full Time (a) Work	Other (b) Activities
Sample Size	3778	2500	3667	870
(% in Group)	(34.9)	(23.1)	(33.9)	(8.1)
(Measured in 1984)				
Importance of:				
Family	-.17	.09	.08	.22
Social Concerns	.25	-.01	-.23	-.12
Work	.07	.02	-.03	-.25
Highest Salary /Month	1047	984	1047	909
%Married	14.3	20.1	34.4	30.1
%Had Children	6.8	10.9	22.6	26.6

a Members of this group were not enrolled in either 2-year or 4-year college within the first two years after high school. In addition, subjects were in at least one of the following three categories: (1) they reported working full time at any of four time points after high school graduation in 1980 (10/80, 2/81, 10/81, or 2/82); (2) they were in the military during that time period; or 3) they reported working 35 or more hours per week at any job during the first two years after high school graduation.

b Members of this group were neither in college (2-year or 4-year) nor worked full time at any point in the first two years after high school graduation.

c SES variable is standardized (mean=0, s.d.=1) on the entire HS&B sample at the base year. Slight differences resulted from sampling down for the follow-ups.

d Achievement test is standardized (mean=50, s.d.=10) on the entire HS&B sample at the base year. The achievement score is an equally weighted composite of tests in reading, vocabulary, and math.

e

Factors for imprtance of work, family and social concerns were formed and standardized for the entire sample of 10815. The varaibles involved were:

Family:

1)Finding the right person in life
2)Importance of giving children a better opportunity than my own
3)Importance of living close to parents
4)Importance of having children

Social:

1)Importance of having strong friendships
2)Importance of being a leader in the community
3)Importance of correcting social and economic inequalities

Work:

1)Importance of success in my line of work
2)Importance of finding steady work
3)Importance of having lots of money

Table 2:
Characteristics of 1980 High School Graduates
Broken Down by Activity Two
Years Out of High School and by Gender

Variables	4-Year College M	4-Year College F	2-Year College M	2-Year College F	Full-Time Work M	Full-Time Work F	"Others" M	"Others" F
(1980)								
Background								
SES	.316	.223	.119	-.044	-.219	-.371	-.206	-.414
%White	84.1	83.5	82.2	79.2	77.2	77.5	69.8	67.5
%Black	9.7	11.5	8.3	9.9	11.0	11.3	16.0	17.5
%Hispanic	6.2	5.0	9.5	11.0	11.8	11.2	14.2	15.0
Achievement	56.1	54.3	51.1	49.8	46.7	46.1	45.3	44.3
Academic								
Track:								
Academic	66.1	63.3	38.9	38.3	15.5	15.8	28.2	21.6
GPA, 1980	3.14	3.31	2.77	2.97	2.44	2.77	2.53	2.68
# Math Crs.	3.30	3.02	2.41	2.18	1.53	1.32	1.46	1.31
College								
%Accepted	64.7	68.7	36.0	34.2	21.1	21.2	34.4	35.1
%Rejected	8.5	5.6	22.4	15.7	34.9	27.0	31.9	19.1
(1982)								
%Had Child	2.4	2.9	2.0	4.0	6.2	14.4	5.5	26.7
%Homemakers	.1	2.2	.2	2.5	.1	8.1	1.1	22.6
%Unemployed	29.1	26.5	27.9	21.1	21.6	30.3	2.3	17.8
%Lived W/								
Spouse	3.5	4.9	3.3	8.4	10.6	16.6	6.7	35.1
Importance of:								
Family	-.144	-.044	-.044	.140	-.038	.186	-.132	.185
Social	.010	.043	-.107	-.220	-.332	-.427	-.159	-.326
Work	.039	-.164	.134	-.109	.111	-.338	.332	-.639
(1984)								
High Salary	112	972	1115	854	1115	953	1083	722
%Married	10.4	17.7	15.8	24.1	24.8	45.7	16.2	38.7
Importance of:								
Family	-.300	-.054	-.055	.216	-.120	.325	-.055	.384
Social	.255	.254	.093	-.093	-.199	-.268	.155	-.282
Work	.140	.016	.133	-.084	.144	-.236	.220	-.536

Table 3
Characteristics of 1980 High School Graduates
Broken Down by Activity Two
Years Out of High School and by Race

	4-Year College			2-Year College			Full-Time Work			"Others"		
	B	H	W	B	H	W	B	H	W	B	H	W
(1980)												
Background												
SES	-.33	-.19	.37	-.41	-.28	.12	-.64	-.57	-.20	-.66	-.80	-.17
%Female	57	48	53	57	56	51	47	45	46	64	63	61
Achievement	47	49	56	44	46	52	41	42	48	40	41	47
Academic												
Track:												
Academic	55	56	67	31	32	40	21	9	16	21	14	27
GPA	2.9	2.9	3.3	2.6	2.7	2.9	2.5	2.4	2.6	2.5	2.4	2.7
# Math Crs.	2.5	2.6	3.3	1.8	1.9	2.4	1.2	1.0	1.5	1.1	1.1	1.5
College												
%Accepted	51	48	70	28	29	37	24	21	21	31	26	38
%Rejected	12	12	6	23	21	18	29	36	30	26	34	21
(1982)												
%Had Child	10	7	2	13	5	2	19	13	8	25	11	19
%Homemakers	2	3	1	2	1	1	3	5	4	12	14	15
%Unemployed	35	29	26	35	21	23	34	36	23	9	9	14
%Lived W/												
Spouse	4	6	4	4	6	6	6	20	19	7	22	22
Importance of												
Family	-.02	.18	-.12	.02	.25	.03	.02	.18	.06	-.05	.08	.09
Social	.44	.28	-.04	.16	-.01	-.22	.18	-.08	-.50	.09	-.06	-.39
Work	.32	.18	-.13	.28	.23	-.05	.21	.05	-.16	.28	-.24	-.41
(1984)												
Importance of												
Family	.11	.09	-.22	.21	.44	.03	.02	.29	.06	.03	.28	.25
Social	.69	.49	.19	.37	.22	-.08	.36	.06	-.35	.20	.25	-.27
Work	.39	.27	.02	.28	.22	-.04	.27	-.02	-.07	.11	-.15	-.36
High Salary	882	1028	1066	894	1027	987	964	1157	1041	717	1056	918
%Married	10	18	15	12	21	21	19	40	36	14	26	35

Table 4:
Characteristics of 1980 High School Graduates
Broken Down by Activity Two
Years Out of High School and by Track

Variables	4-Year College			2-Year College			Full-Time Work			"Others"		
	G	A	V	G	A	V	G	A	V	G	A	V
Background												
SES	.14	.37	-.04	.03	.18	-.18	-.31	-.04	-.35	-.43	.15	-.50
%Female	54	52	58	53	52	52	42	46	51	67	55	59
%White	83	86	72	80	84	77	79	78	76	70	77	63
%Black	11	9	20	9	7	12	10	15	11	16	15	21
%Hispanic	6	5	8	11	8	12	12	7	13	17	9	16
Achievement	52	57	49	49	54	48	46	52	45	44	50	42
Academic												
GPA	3.0	3.4	3.0	2.7	3.1	2.8	2.5	2.9	2.6	2.5	3.0	2.7
# Math Crs.	2.6	3.6	1.9	2.0	3.0	1.6	1.2	2.6	1.2	1.3	2.5	.9
College												
%Accepted	53	75	40	31	46	20	15	40	17	27	49	26
%Rejected	12	4	13	23	12	27	36	18	33	24	19	30
(1982)												
%Had Child	4	2	6	3	2	5	9	7	12	23	9	20
%Homemakers	2	1	2	2	1	0	3	2	5	19	6	15
%Unemployed	30	27	29	28	20	22	23	24	31	5	11	23
%Lived W/ Spouse	6	3	8	7	4	7	20	10	19	28	9	16
Importance of												
Family	-.09	-.11	.06	.12	-.02	.08	.03	.20	.06	.06	-.04	.17
Social	-.05	,07	-.07	-.25	-.07	-.18	-.39	-.16	-.46	-.36	-.25	-.29
Work	-.06	-.08	-.02	-.05	.-3	.04	-.09	-.10	-.12	-.38	-.10	-.36
(1984)												
Importance of												
Family	-.19	-.22	.21	.17	-.02	.18	.03	.12	.12	.24	-.16	.42
Social	.10	.34	.11	-.01	.05	-.06	-.29	-.03	-.26	-.27	.07	-.24
Work	-.01	.09	.16	-.04	.07	.00	-.10	.61	-.00	-.40	-.01	-.28
High Salary	1006	1027	1170	1036	919	958	1038	1060	1044	873	802	1046
%Married	18	11	27	21	18	22	35	30	35	35	19	33

Table 5

Which Background Charatceristics
Determine Where You Go After High School:
Discriminant Analysis of Background Characteristics Which Relate to Primary Activity Two Years Out of High School.

Sample: All High School Graduates who had data on first and second follow-ups in High School and Beyond. N

Groups:		
	(1)Attended a 4-year college for at least one semester.	3336
	(2)Attended a 2-year college for at least one semester.	2152
	(3)Held at least one full-time job.	3084
	(4)Other.	697

1

Discriminant Function Coefficients

	Function 1
Independent Variables:	
Achievement	.856
Social Class	.436
Minority	.282
Female	.160

Group Loadings on Discriminant Function

	Function 1
Groups:	
4-Year College	.689
2-Year College	.054
Full-time Work	-.085
"Other"	-.696

1

The Following Variables were attempted, but did not enter the function:
Dummy Variable for whether the Graduate came from a single or two-parent home.

Table 6
Which High School Behaviors and Attitudes
Determine Where You Go After High School:
Discriminant Analysis of Background Characteristics Which Relate
to Primary Activity Two Years Out of High School.

Sample: All High School Graduates who had data on first and second follow-ups in High School and Beyond.	N
Groups: (1)Attended a 4-year college for at least one semester.	3228
(2)Attended a 2-year college for at least one semester.	2063
(3)Held at least one full-time job.	2879
(4)Other.	638

Discriminant Function Coefficients

	Function 1
Independent Variables:	
Applied to College While in High School	.556
Expectation of Number of Years in School	.371
Achievement	.156
Number of Math Courses Taken in HS	.140
In the Academic Track or Not	.094
Expectations for College in 8th Grade	.091
Grade Point, Senior Year of High School	.086
Average # of Hours of Homework Per Week	-.003

Group Loadings on Discriminant Function

	Function 1
Groups:	
4-Year College	1.026
2-Year College	.264
Full-time Work	-1.148
"Other"	-.878

Figure 1
Path Diagram for a Model Predicting
College Attendance Within Two Years After High School

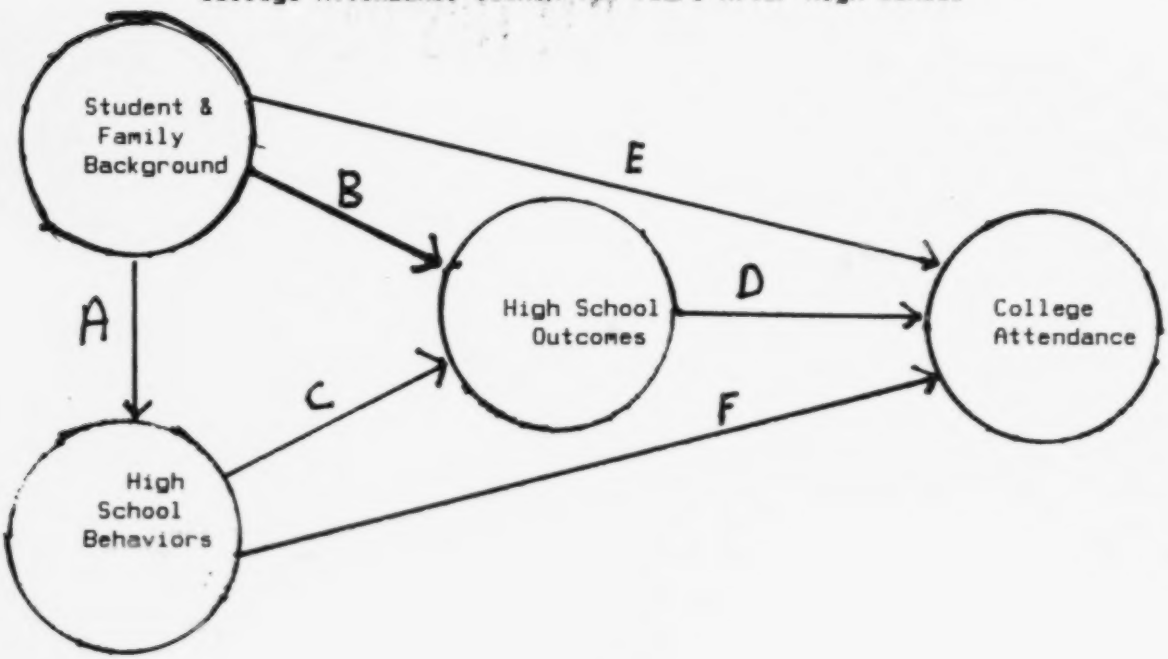

Table 7:
Regression Results for Causal Model Predicting College Attendance

Independent	Academic Track	Parent Influence	Homework	Math Courses	College Plans	Achievement	GPA	Applied College	Went College
					Dependent Variables				
Background									
Female	.027**	.037***	.140***	-.029**	.110***	-.034***	.168***	.041***	.019*
Hispanic	-.029**	.016	-.002	-.070***	.004	-.150***	-.085***	-.005	.013
Black	.029**	.066***	.029**	-.036***	.068***	-.210***	-.104***	.040***	.013
Social Class	.303***	.349***	.203***	.370***	.326***	.082***	-.073***	.031**	.074***
High School Behaviors									
Academic Track						.137***	.097***	.120***	.033**
Parental Influence						.046***	.056***	.283***	.122***
Homework						.020*	.101***	.055***	-.002
# of Math Courses						.429***	.334***	.150***	.076***
College Aspirations						.087***	.106***	.163***	.088***
High School Outcomes									
Achievement									.085***
Grade Point									.035***
Applied to College									.369***
R-Square (Variance Explained)	.09	.11	.05	.16	.11	.52	.32	.36	.42

Table 8:

Other Activities of 1980 High School Graduates Attending 4-Year College, 2-Year College, Working Full Time, and Engaged in Other Activities (n=10,815)

	4-Year College	2-Year College	Full-Time Work	Other Activities
Sample Size	3778	2500	3667	870
(% in Group)	(34.9)	(23.1)	(33.9)	(8.1)
Training				
%Taking Voc Ed	6.7	14.0	3.7	9.6
%Apprenticeship	5.1	4.7	4.1	2.0
%Gov't Training	.5	1.2	1.4	.5
%Living Alone	10.7	5.7	7.0	5.4
%Manpower	3.6	1.8	3.0	2.9
%CETA	7.0	6.7	7.9	12.1
%Youth Corps	1.0	.6	.9	2.8
%Employer Training	18.4	17.7	21.5	11.6
Activities				
%Active in Church	24.4	21.4	17.7	19.8
%In Non-Credit College	19.3	11.5	5.6	8.2
%Employed, 1984	29.3	34.4	47.3	30.0
%Active in Social Club	14.7	14.4	14.3	17.1